

Comparisons of Job Characteristics

Focus Occupation: Geological and Petroleum Technicians (19-4041)

Associated Occupation: Environmental Engineers (17-2081)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 71

Focus Occupation: Geological and Petroleum Technicians (19-4041)

Associated Occupation: Environmental Engineers (17-2081)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Engineering and Technology	5.7	21.7	12.0	<<	Extensive education and/or training may be required
Design	5.2	17.2	7.3	<<	Extensive education and/or training may be required
Mathematics	9.2	16.3	14.8	<	Expanded education and/or training may be required
Chemistry	4.8	15.8	10.7	<<	Extensive education and/or training may be required
Physics	4.3	15.7	11.2	<<	Extensive education and/or training may be required
Law and Government	5.9	13.6	7.3	<<	Extensive education and/or training may be required
Building and Construction	4.0	13.0	4.5	<<	Extensive education and/or training may be required
Public Safety and Security	6.9	12.0	7.1	<<	Extensive education and/or training may be required
Biology	3.7	10.0	3.9	<<	Extensive education and/or training may be required
Transportation	4.6	9.0	6.2	<<	Extensive education and/or training may be required
Geography	3.9	8.3	11.6	>>	Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 80

Focus Occupation: Geological and Petroleum Technicians (19-4041)

Associated Occupation: Environmental Engineers (17-2081)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Reading Comprehension	10.7	16.4	11.7	<<	Extensive development of skills in this area may be required
Critical Thinking	10.8	14.5	10.6	<<	Extensive development of skills in this area may be required
Complex Problem Solving	9.1	13.9	8.6	<<	Extensive development of skills in this area may be required
Judgment and Decision Making	9.4	13.9	8.9	<<	Extensive development of skills in this area may be required
Systems Analysis	6.5	13.1	7.0	<<	Extensive development of skills in this area may be required
Mathematics	6.2	12.3	7.8	<<	Extensive development of skills in this area may be required
Systems Evaluation	6.4	11.7	6.2	<<	Extensive development of skills in this area may be required
Science	4.5	11.4	9.8	<	A higher skill level may be required
Operations Analysis	5.0	11.0	4.8	<<	Extensive development of skills in this area may be required
Quality Control Analysis	5.9	10.4	6.3	<<	Extensive development of skills in this area may be required
Management of Financial Resources	3.3	7.2	2.6	<<	Extensive development of skills in this area may be required
Programming	2.2	5.6	2.9	<<	Extensive development of skills in this area may be required
Technology Design	2.6	5.5	2.6	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 92			
Focus Occupation: Geological and Petroleum Technicians (19-4041) Associated Occupation: Environmental Engineers (17-2081)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Problem Sensitivity	11.1	17.0	10.3	<<	Extensive improvement in abilities may be required
Deductive Reasoning	10.6	16.2	10.4	<<	Extensive improvement in abilities may be required
Oral Comprehension	12.5	16.1	12.6	<<	Extensive improvement in abilities may be required
Written Comprehension	11.0	16.0	13.0	<	Some improvement in abilities may be required
Inductive Reasoning	10.2	15.4	10.7	<<	Extensive improvement in abilities may be required
Information Ordering	9.9	14.2	10.7	<<	Extensive improvement in abilities may be required
Category Flexibility	9.0	13.6	10.3	<<	Extensive improvement in abilities may be required
Flexibility of Closure	7.8	13.5	9.9	<<	Extensive improvement in abilities may be required

Mathematical Reasoning	6.3	13.4	8.4	<<	Extensive improvement in abilities may be required
Perceptual Speed	7.4	11.9	7.6	<<	Extensive improvement in abilities may be required
Speed of Closure	5.9	11.2	5.1	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 75

Focus Occupation: Geological and Petroleum Technicians (19-4041)
Associated Occupation: Environmental Engineers (17-2081)

Work Activities	Exclusivity of Activity
Adhere to safety procedures	12
Analyze scientific research data or investigative findings	27
Analyze technical data, designs, or preliminary specifications	47
Collect scientific or technical data	30
Communicate technical information	4
Compile numerical or statistical data	38
Develop or maintain databases	30
Develop tables depicting data	33
Direct and coordinate activities of workers or staff	3
Examine engineering documents for completeness or accuracy	62
Explain complex mathematical information	30
Follow safe waste disposal procedures	50
Prepare reports	8
Prepare safety reports	60
Read technical drawings	7
Understand engineering data or reports	48
Use computers to enter, access or retrieve data	3
Use hazardous materials information	35
Use mathematical or statistical methods to identify or analyze problems	30
Use quantitative research methods	35
Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 75

Focus Occupation: Geological and Petroleum Technicians (19-4041)
Associated Occupation: Environmental Engineers (17-2081)

Tools and Technologies	Exclusivity
Audio and visual equipment	4
Business function specific software	1
Chemical evaluation instruments and supplies	10
Chromatographic measuring instruments and accessories	16
Computer data input devices	2
Computers	1
Content authoring and editing software	1
Cutting and crimping and punching tools	3
Data management and query software	1
Electrochemical measuring instruments and accessories	9
Gas analyzers and monitors	10
Indicating and recording instruments	2
Industry specific software	1
Information exchange software	1
Laboratory decanting and distilling and evaporating and extracting equipment and supplies	19
Laboratory mixing and stirring and shaking equipment and supplies	19
Laboratory ovens and accessories	15
Liquid and solid and elemental analyzers	19
Sampling equipment	12
Seismological instruments	56
Soil measuring equipment	20
Spectroscopic equipment	10
Temperature and heat measuring instruments	6
Viewing and observing instruments and accessories	4
Weight measuring instruments	7

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.